REMARKS

In the Official Action, the Examiner raised a number of rejections under the second paragraph of 35 U.S.C. § 112. In addition, the Examiner rejected all of the claims of record as being anticipated by three separate documents, namely Yagi et al., U.S. Published Patent Application No. 2002/0027127, JP 2002-246708 and Sakayori et al., U.S. Published Patent Application No. 2003/0085451 (which is the corresponding U.S. published application for the '708 JP document) for the reasons set forth on pages 4 and 5 of the Action.

By the present Amendment, editorial revisions have been addressed in the specification including a correction of a translation of a term from Japanese to English on page 7. This revision is supported by the statement in the third sentence of the same paragraph which indicates that when the oxide layer is thinner, the etching rate becomes faster and the sentence immediately preceding the revision which states that when the surface oxide is more than 50 angstroms, the etching rate is considerably slow. The present Amendment also amends several of the claims in order to make the meaning more clear without affecting the substantive scope of the claims. However, prior to addressing the rejections set forth in the Action, applicants believe that an explanation of the background and important aspects of the present invention are in order. As discussed in the background of the specification, a polyimide metal laminate has been used as a flexure for a suspension for a hard disk. The structure of a typical flexure as part of a suspension for a hard disk is illustrated in the attached drawing provided in Appendix A. In order to prepare such a flexure, sequential etching steps are conducted to etch the stainless steel and then the polyimide so as to form the desired pattern. Such sequential steps are illustrated in the second attachment provided in Appendix B. As can be understood for

considering the illustrated procedure, the etching of the stainless steel exposes certain portions of the polyimide layer which is then selectively etched. It has been found that the presence of a metal oxide film influences the etching rate of the insulating polyimide layer. That is, even after the stainless steel is etched, the metal oxide layer remains on the polyimide layer which can adversely affect the etching rate. It has been found in accordance with the present invention that if the depth of the metal oxide film where the concentrations of the main metal element and oxygen are equal (as measured by Auger Electron Spectroscopy), is less than 50 angstroms, the etching rate can be controlled to provide acceptable results. As explained on pages 8 and 9 of the specification, the thickness of the metal oxide film can be controlled using known techniques and it is likewise apparent that the depth at which the concentrations of the main metal element and oxygen are equal to each other are not inherently less than 50 angstroms. In this respect, the advantages which can be obtained in accordance with the present invention are illustrated in the Inventive Examples starting on page 16. In contrast, as can be seen from the Comparative Example starting at the bottom of page 29, when a metal oxide film does not conform to the present invention, substantially inferior results occur including a low polyimide etching rate and a poor etched structure.

With the foregoing discussion in mind, applicants respectfully submit that all of the claims now of record conform to the provisions of the second paragraph of 35 U.S.C. §112 and are patentable over the aforementioned cited documents. In particular, the Examiner has questioned whether the etching process can result in complete elimination of the insulating layer and whether the metal oxide film occurs as a result of the AES test. In view of the discussion in the specification and the recitation in claim 1 that the insulating layer is subjected to an etching processing to

form a pattern, it is clear that the insulating layer is not completely eliminated and this is further supported by the drawing provided in Appendix B. Moreover, it is further clear that any metal oxide layer is a result of the metal itself and not the result of measurement according to AES. With respect to the Examiner's question as to the term "measured at a time," such term was used in view of the AES technique which is a time-elapsing manner as explained on page 6. However, to make this more clear, the term has been revised to "at a depth" to provide greater clarity with respect to the referred to thickness of the metal oxide film. As to the reference of a "main metal element," it is used to designate the principal metal in the layer. For instance, if a copper alloy is used, the main metal would be copper whereas if a stainless steel layer is used, the main metal would be iron. Such terminology is used to distinguish alloying elements or impurities which can also be present in the layer. However, if the Examiner prefers, the term "metal" of the metal layer can be used with the understanding that this term is synonymous. Finally, with respect to the Examiner's inquiry regarding the phrase "at least 0 angstroms," claim 1 has been amended to recite that the depth is less than 50 angstroms which should clarify the scope of the claims. Corresponding revisions have been made in independent claim 22 which should address the same points raised with regard to that claim.

Turning to the points raised with respect to certain dependent claims, claim 4 has been amended to make it clear that both the SUS and metal layer satisfy the metal oxide film recitations of claim 1. In addition, claim 5 has been amended to make it clear that the layers are in the stated order and each of claims 6 and 10-13 have been amended to recite that the metal laminate comprises the etched insulating layer consistent with the teachings of the specification and the drawings provided in Appendices A and B. Accordingly, all points raised with respect to the

second paragraph of 35 U.S.C. §112 have been addressed and met by the instant response and applicants accordingly request that the rejections been withdrawn.

From the discussion of the present invention provided above, it should also be clear to those of ordinary skill in the art that the cited documents do not disclose or suggest the invention as defined in the claims of record. The cited documents generally relate to techniques of etching a metal laminate. However, none of the documents disclose or remotely recognize that the etching rate of the insulating layer is affected by a metal oxide film. Moreover, none of the documents teach the invention that has the specific provisions relating to the metal oxide film as defined in the claims of record. It goes without stating that none of the documents in any way appreciates the substantial advantages which can be obtained in accordance with the present invention relative to the results obtained in aforementioned Comparative Example 1. The information provided in the present application and particularly in Comparative Example 1 further demonstrates that the claimed invention with the recited metal oxide film is not inherently present and therefore the anticipation rejections cannot be sustained on the principle of "inherency" which requires that the asserted inherent element be necessarily present.[1]

For all of the reasons set forth above, applicants respectfully submit that the claims of record clearly and distinctly define the various aspects of the present invention in a manner which is patentable over the cited documents and therefore request reconsideration and allowance of the present application.

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[1] *See Continental Can Co. v. Monsanto Co.*, 948 F2d 1264, 20 USPQ 2d 1746 (Fed. Cir. 1991).

Should the Examiner have any questions concerning the subject application, he is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

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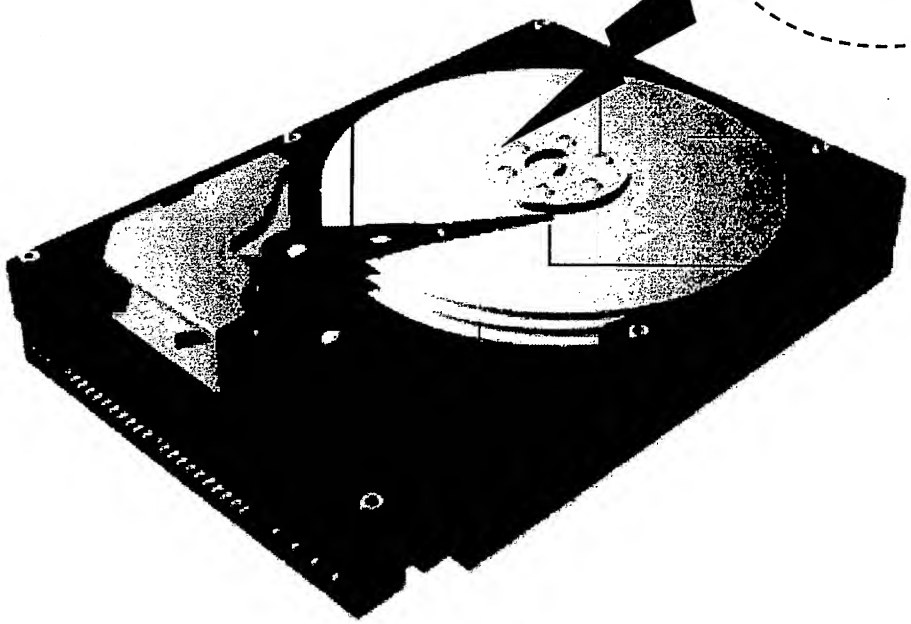
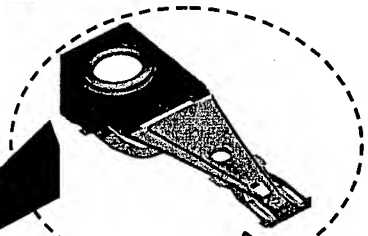
SCL

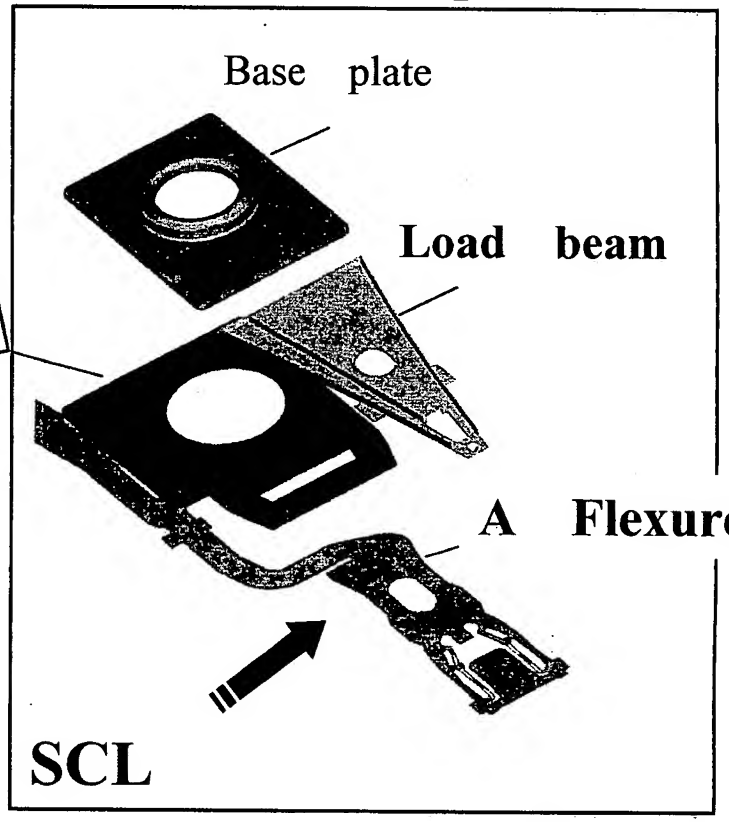
HDD (Hard Disk)



Suspension



Structure of Suspension



Supplementary explanation

Typical process flow scheme